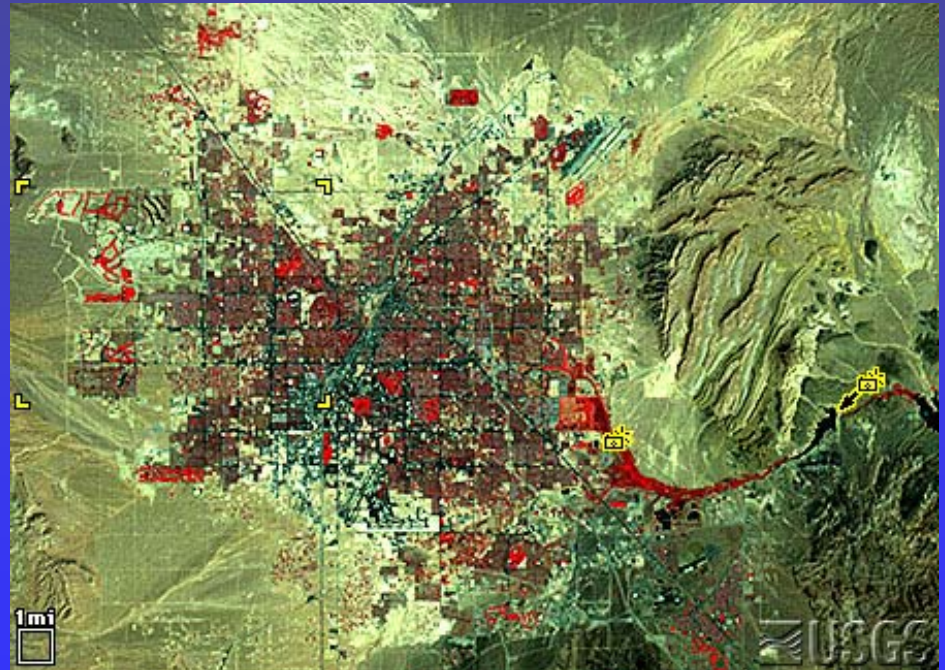


# Monitoring Land Use Change

John Gross  
I&M Program  
Ft. Collins, Colorado



## *Roadmap*

- Questions and challenges
- Opportunities
- Approach
- Future actions

## *Why focus on land use / land cover change?*

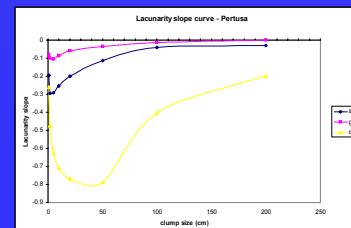
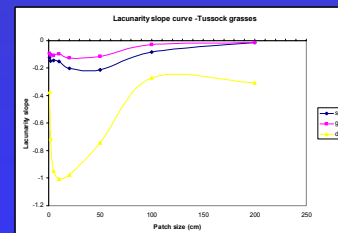
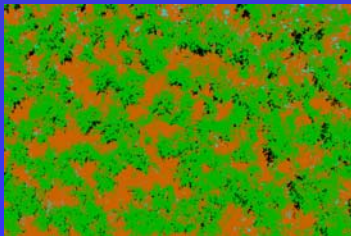
- Land use and land cover change are common issues across networks
- Persistent problem for parks (GAO 1994)
- Challenging to address
  - issues with scale
  - specialized and evolving technology
  - evaluation is contentious

## *What are the questions?*

- **Land cover change**
  - Human-altered
  - Vegetation (composition, pattern)
- **Land use change**
- **Disturbance**
  - Flood, drought, fire, disease/pests, windthrow
- **Wildlife habitat**
  - Vegetation / topography / pattern
- **Many related issues**
  - Water quality, invasive species, recreation, viewsheds

# Challenges

- Scale issues
- What are appropriate indicators?
- How are patterns linked to ecological function?
- What data are necessary?
- What data are available?
- How can we analyze / evaluate indicator?



## Context

- LULC part of landscape-scale challenge
- Vital sign selection tightly linked to technology
  - search for optimal \$ value
  - cross-disciplinary approach
  - remote-sensing expertise
- Partnerships are essential
- Economy of scale – methods and data



## Networks using remotely sensed data:

- NETN – land cover change
- NCCN – LULC, disturbance
- GLKN – LULC
- NCPN – LULC
- NCBN – coastal change (LIDAR)
- HTLN – Land cover change
- NCRN – cover, pattern
- PACN – lots!
- SODN – DOD trails; vegetation

## *Current activities*

### NPS

- Coastal parks - coastal change (LIDAR)
- Vegetation mapping (many)
- Underwater surveys
  - coral reefs
  - bathymetry
- Fire monitoring
- Wetland evaluation (sea level rise)
- Monitoring glaciers / snow



## *Opportunities*

- Address LULC / RS applications
- Partnerships
  - CESU
  - NASA
  - USGS, USGS-EROS
  - DOD

## *Approach – working group*

Review questions/methods

- LULC and related issues

Coordinate development of

- SOPs
- topic reviews
- contracts
- example products
- Examine application of RS data / products
  - MRLC, National map, MODIS products
  - LIDAR / high resolution data (\$\$)

Identify / nurture opportunities

- USGS-EROS
- NASA
- DOD
- Imagery providers (e.g., NIMA)

*Where to next ...*

Review Phase II reports

Working group meeting  
January? – contact me

Major opportunities!

Coordination

GIS Committee

Remote sensing specialist?